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ABSCESS (?) IN THE URETHRO-VAGINAL SEPTUM.

BY T. S. CULLEN, M. B., *Assistant Resident Gynecologist,*  
*The Johns Hopkins Hospital.*

Presented by the author -





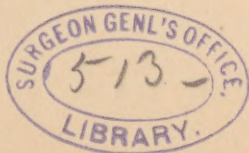
## ABSCESS (?) IN THE URETHRO-VAGINAL SEPTUM.

By T. S. CULLEN, M. B., *Assistant Resident Gynecologist,*  
*The Johns Hopkins Hospital.*

This case of Dr. Kelly's entered the Hospital, January 16, 1894. Is colored, aged 31, married, has no children, and is a hard worker, general health good. Immediately after marriage she complained of painful coitus. Four years ago she noticed a small lump about 2 cm. in diameter in the vault of the vagina. At first it was very soft and tender but afterward grew hard. She noticed an occasional slight discharge of pus from the urethra during the intervals between micturition. Examination of the chest and abdomen proved negative. Under anæsthesia an ovoid mass  $3 \times 2\frac{1}{2}$  cm. was found in the anterior vault of the vagina, pressure on which caused an escape of pus from the urethra. On passing the speculum into the bladder the base was found markedly injected. Withdrawing the speculum slightly, a little depression was seen in the urethral floor, and a probe passed into this depression entered a small sac. On pressing the sac and looking in the speculum one could see the pus oozing up from this depression in the urethral floor. The patient was placed in the left lateral position to secure a good exposure. A small elliptical incision was made over tumor and the parts dissected back to the urethra, the sac cut away and the opening closed by 10 silk sutures, which were removed in 11 days; the union was perfect. The patient was discharged February 16th.

### MICROSCOPICAL EXAMINATION OF THE SAC.

The outer surface of the sac showed typical vaginal mucous membrane; beneath this was connective tissue, rich in oval and spindle-shaped cells. The blood-vessels were numerous and dilated. Just beneath the inner wall of the sac were irregular aggregations of polynuclear leucocytes in the tissue. The inner surface was rough and presented numerous eleva-



tions and depressions. In some of these depressions irregularly oval cells with small oval nuclei were found either in short rows or arranged promiscuously. These appeared to be identical with urethral epithelium, thus indicating that the sac was a urethral diverticulum.

Very little is said in text-books concerning this subject, and in fact the majority do not mention it. Hey,<sup>16</sup> in his *Surgery*, published in Philadelphia in 1805, mentions a case which he treated in 1786. A woman for 15 years had sudden and irregular purulent discharges from the urethra. These were never mixed with urine. Examination revealed a roundish tumor at the external os. On pressing this, pure pus escaped from the urethra, yet urine drawn from the bladder did not contain the least purulent matter. A probe introduced into the urethra could be pushed into the most dependent part of the tumor. The tumor was longitudinally incised and packed with lint. Its vaginal covering was found to be thickened and the cyst-lining was smooth. The patient speedily recovered. From this time until Foucher<sup>9</sup> reported a case, in 1857, no further cases can be found in the literature. In 1875 Tait<sup>40</sup> published a case, closely followed by Gillette, in 1876.<sup>14</sup> Since then scattered cases have been published in France, Germany, Great Britain and America.

#### SYMPTOMS.

The first symptom manifested is usually painful micturition, which gradually increases in severity after a period varying from a few days (de Bary<sup>1</sup>) to several months (Hermann<sup>18</sup>). There is marked pain during micturition, followed by a sudden discharge of ammoniacal urine or pus which gives immediate relief. About this time a swelling is noticed in the vaginal vault. It is usually situated in the mid-line about 1 to 2 cm. behind the external orifice of the urethra. The tumor varies in size from a marble (Routh<sup>34</sup>) to a hen's egg (Tait<sup>41</sup>), is tender and fluctuant. On pressure it diminishes in size, and discharge of ammoniacal urine or pus from the urethra follows. A catheter introduced along the anterior wall of the urethra will enter the bladder without difficulty, and usually clear urine escapes. If introduced along the urethral floor with its point directed downward it will enter the sac cavity. The patients are usually in good health and give no history of chills.

On changing from a sitting to a standing posture there will often be an escape of the sac contents, the first intimation to the patient being that the clothing is moist. Coition may also cause a discharge of the fluid (Giraud<sup>15</sup>). In one case (Santesson<sup>35</sup>), on pressure the contents escaped into the bladder instead of passing out of the urethra. Where the discharge is irritating there is excoriation of the external genitals and thighs. The sac opening in the urethra will admit as a rule a No. 6 catheter. The sac may have smooth glistening walls (Hey<sup>16</sup>), be lined by squamous epithelium (de Bary<sup>1</sup>), or have a ragged appearance with trabeculae traversing its cavity (Routh<sup>34</sup>). Its contents are usually decomposed urine and pus cells, and where the sac contains calculi, blood cells are also found (Chéron<sup>4</sup> and Giraud<sup>15</sup>). In one of the cases where calculi were present the interior of the sac presented an ulcer at its most dependent part, which was probably due to mechanical injury produced by the calculus.

*Age.*—This condition has been found in a child one year old (de Bary<sup>1</sup>), and may occur in persons of any age (Chéron<sup>4</sup>); the usual age, however, is between 30 and 50.

*Cause.*—In speaking of the origin of these sacs it will be well to briefly run over the anatomy of the structures situated in the urethro-vaginal septum and also to describe the urethra.

In the urethro-vaginal septum there may be remains of Gartner's ducts as first described by Malpighi<sup>27</sup> in 1681, and again discovered by Gartner<sup>11</sup> in 1822. The latter first noticed them while injecting the lymph vessels in a cow. He was able to trace the duct upward nearly to the ovary, downward to the cervix uteri, and in later preparations found them opening into the vagina near the urethral orifice. He also found them in the pig. He compared this duct to the vas deferens in the male.

Jacobson<sup>19</sup> in 1830 obtained similar results, but described the ducts somewhat more minutely. Rieder<sup>33</sup> examined specimens from 40 human beings, and found remains of the ducts in 8 cases. He concludes that portions of the duct which remain until birth will persist throughout life. He agrees with Dohrn<sup>6</sup> that the duct is more commonly found on the right side, the left being obliterated by rectal pressure. At the lower part of the cervix uteri the duct is near the uterine

lumen, then passes downward and outward over the vaginal vault close beneath the mucous membrane. He was never able to trace it to the sides of the urethra. The duct is lined by high cylindrical epithelium, which is loosely attached to its basement membrane, and may lie free in the lumen of the tube. It may, however, have two layers of cells. The connective tissue layer is about  $17\ \mu$  thick. Then comes an inner longitudinal, a median circular and an outer longitudinal muscular coat.

Von Preuschen<sup>31</sup> found the ducts in a cat opening slightly above the urethral orifice. They were lined by cylindrical epithelium.

The urethra is lined by laminated epithelium and contains racemose glands and lacunæ.

Henle<sup>17</sup> in his text-book speaks of Morgagni's lacunæ as furrows and pockets of mucous membrane, and mentions branching glands lined by cylindrical epithelium. These glands sometimes contain yellow or brown laminated concretions like those found in the prostâtes of men.

Luschka<sup>26</sup> also speaks of lacunæ and glands. He says the lacunæ are "canal-like" and that they run in the direction of the urethra and are visible from without.

Oberdiech,<sup>29</sup> in examining the epithelium of the female urethra, also makes a distinction between the lacunæ and glands.

Lastly, Skene's<sup>39</sup> tubules, which have since been described by Schüller,<sup>36</sup> Kock<sup>23</sup> and Böhm,<sup>3</sup> the two latter saying that they are remains of Gartner's duct. These tubules are situated just within the urethral orifice on either side; they admit a probe 1 mm. in diameter for 5 to 10 mm.

The possible causes are:

1. Congenital cysts or those occurring in the new-born. The latter variety has been mentioned by Englisch,<sup>8</sup> who found that in new-born children, small oblong cysts are occasionally present in the urethra near its orifice. He suggests that these may in after life increase in size and give rise to the above condition.

2. A true urethral diverticulum where all the urethral coats take part. This is due to the wall becoming weak at one point (Lannelongue,<sup>24</sup> Priestley<sup>32</sup>).

3. Accumulation of secretions in a urethral gland.

4. Dilatation of a lacuna of Morgagni probably due to inflammation, closure of its orifice, and subsequent distension with secretion (Winckel<sup>44</sup>).

5. Dilatation and possible occlusion of Skene's tubules (Böhm<sup>3</sup>).

6. Arrest of calculi in the urethra, with a diverticulum forming to accommodate the same (Chéron,<sup>4</sup> Piedpremier<sup>30</sup>).

7. Traumatism, as a kick, or injuries during labor. Here an abrasion of the mucous membrane takes place and the urine gains access to the small pocket, decomposes and sets up an inflammatory process (Duplay<sup>7</sup>).

8. A suppurating cyst situated in the urethro-vaginal septum and afterward bursting into the urethra (Hermann<sup>18</sup>).

It is not difficult as a rule to differentiate between sac-like dilatations in the urethral floor and cysts of Gartner's duct. The latter cysts are generally about the size of a pea or cherry and have no communication with the urethra. Kiwisch<sup>22</sup> found five such cysts, one behind the other, and Boys de Loury<sup>25</sup> has seen a beaded row extending the whole length of the vagina. Veit<sup>43</sup> observed three similar cases which he accidentally noticed while making examinations.

Galabin's<sup>10</sup> second case is interesting in that the cyst had no opening into the urethra, but communicated with a tube running up as far as the cervix. This tube contained a watery and semi-purulent fluid.

A second and similar case has been reported by de Bary,<sup>1</sup> in which a cyst the size of a goose-egg was found in the urethro-vaginal septum. It contained a fluid which yielded albumen but no mucin. It was lined by polygonal flat epithelium. Both of these cases suggest the possibility of a cyst of the lower portion of Gartner's duct.

The *treatment* consists in the removal of the redundant tissue *in toto* by an elliptical incision, then a slight inversion of the mucous membrane and closure by silk sutures. The catheter should be passed three times daily for 3 to 4 days, and the patient should afterwards be advised to urinate in the genu-pectoral position for a week longer. In introducing the catheter, care should be taken to pass it along the anterior urethral wall.

Below is a list of the cases found in the current literature.

## LITERATURE.

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2. Batuard : Piedpremier, Paris. Thèses, 1887-8. Contribution à l'étude des maladies de l'urèthre.
3. Böhm : Ueber Erkrankungen der Gartner'schen Gänge. Archiv für Gyn., Bd. XXI, Heft 1, S. 176.
4. Chéron : Piedpremier, Paris. Thèses, 1887-8. Contribution à l'étude des maladies de l'urèthre.
5. Cory : Abscess of female urethra. London Obst. Trans., Vol. XI, 1869.
6. Dohrn : Archiv f. Gyn., Bd. XXI, 1883, S. 328. Ueber die Gartner'schen Kanäle beim Weibe.
7. Duplay : Pouches urineuses. Archiv Générales de Médecine, no. 146, 1880, p. 12.
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10. Galabin : Chronic abscess of the female urethra. London Obst. Transactions, Vol. XXVIII, 1886, p. 186.
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23. Kock : Ueber die Gartner'schen Gänge beim Weibe. Arch. f. Gynäkologie, Bd. XX, 1883, S. 487.
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25. Boys de Loury : Ueber die Cysten der Vagina. G. Veit : Handbuch der weiblichen Geschlechtsorgane, 2. Auf. 1867, S. 544.
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34. Routh : Urethral diverticula. Lond. Obst. Trans., Vol. XXXII, 1890, p. 69.
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TABLE OF SACS FOUND IN URETHRO-VAGINAL SEPTUM.

Reported by	Age.	Married or Single.	Chief Symptoms.	Duration.	Cause.	Operation.	Complications.	Result.
de Bary.	1		Bearing-down sensation at stool. Painful micturition. Small tumor in left vaginal vault just behind urethral orifice. Sac opened into urethra.			Removal of portion of sac wall with ecraseur.		Rapid recovery.
de Bary.	23	S.	Innate of an asylum. Specimen found at autopsy.					
Batuard.	33	M.	Tumor size of a "nut" in ant. vaginal vault. Pressure over it caused escape of pus from the urethra.			Sac incised.	Prolapsus uteri. After operation incontinence of urine for 15 days.	Cured.
Chéron.	68	M.	(Renal colic three years before history was taken.) "Sand in urine." Hard mass felt in ant. vaginal wall, which, on passage of catheter into urethra, proved to be a stone embedded in a saccula- tion of the urethra.			Dilatation of urethra. Extraction of calculus.		
Chéron.	36		Two years before examination passed "sand" in urine. Painful micturition; small tumor in vagi- nal vault. Sac communicated with urethra and contained a small calculus.		Thinks it de- veloped in a lacuna.	Not given.		Sac disap- peared 4 months after operation.
de Cory.	40	M.	Painful micturition. Feeling of fullness in "lower abdomen." Great thirst and headache. Vagi- na hot and tender. Urethra felt like a large <i>roll</i> under finger. Slight fluctuation.			None. While at stool, felt something rupture and pus escaped from the urethra.		Wound healed completely.

Duplay.	23	M.	Painful micturition. Sudden involuntary discharge of small quantities of urine. Tumor size of walnut in ant. vaginal vault, fluctuant and tender. Pressure over it caused muco-pus to escape from the urethra.	Was opened by thermocautery and packed with iodoform gauze.	Cured in 3 months.
Englisch.	35	M.	Painful micturition. Tumor in right vaginal vault, tense and fluctuant. <i>Did not communicate with urethra.</i>	Was opened throughout its entire length and packed with gauze.	Cured.
Foucher.	35	M.	Painful micturition. Tumor in right vaginal vault. This was tense and fluctuant (did not communicate with urethra). "Swelling" in ant. vaginal wall, filled with purulent fluid and communicating with urethra.	Was opened from end to end and packed with gauze.  Redundant tissue cut away and wound closed by sutures.	Cured.
Galabin.			Cavity in urethro-vaginal septum, communicating with a tube running upward toward the cervix and filled with semi-purulent contents. Did not communicate with the urethra.		
Gentle.	40		Painful micturition, the stream being forked or screw-like, with occasional sudden stoppage of flow. Afterward localized pain in the urethra. Tumor in vaginal vault. Catheter introduced into urethra entered sac easily and struck a calculus.	Incision in vaginal vault and removal of calculus.	Rapid recovery.
Gervis (1886).			Painful micturition. Pain referred to vagina.	None. Broke spontaneously into urethra.	Cured.

Reported by	Age.	Married or Single.	Chief Symptoms.	Duration.	Cause.	Operation.	Complications.	Result.
Gillette (1876).	31	M.	Painful micturition. Sudden discharge of urine on standing or during coition. Ovoid mass 4½x3 cm. in ant. vag. wall just behind meatus, communicating with floor of urethra.	1 year.		Redundant tissue cut away and wound closed by sutures.		Cured.
Giraud.	45	M.	Pain in "lower abdomen," especially during coition or when standing. Hard, reddish tumor, size of hen's egg, in vaginal vault. On pressure, foreign bodies felt in its interior. Communicated with floor of urethra.	10 months.	Had been kicked in perineal region 14 months before.	Urethra dilated and calculi removed.		Cured.
Hey (1786).			Irreg. purulent discharge from vagina. Roundish tumor at ext. os uteri. Pressure on tumor caused escape of pus from urethra. Urine clear.	15 years.		Sac longitudinally incised and packed with lint.		Cured.
Hermann.	47	M.	Painful micturition and coition. Tenderness in ant. vag. vault, which communicated with urethra and contained pus.	3 years.		Dilatation of urethra. Appl. of AgNO <sub>3</sub> (stick).		Cured.
Hevder (1889).	31	M.	Pain in urethra. Painful micturition. Involuntary escape of small quantities of urine.	Several months.	Occurred after a difficult labor.	Sac excised.	None.	Cured.
Jones, H.			Painful micturition. Tumor size of hazelnut in ant. vag. vault. Slight discharge of pus from urethra.					Spontaneous recovery.
Keith, S.	44	M.	Frequent micturition. Bulging of ant. vag. wall. Pressure on same caused escape of pus from urethra.			Sac was incised and urethral and vaginal mucous membranes united to each other to insure drainage.		Wound closed in 4 months.

Kelly, H. A. (1884).	31	M.	Painful coition. Painful and frequent micturition. Swelling 3x2.5 cm. in vaginal vault just behind urethral orifice and communicating with floor of urethra. Contained thin pus. Only moderate number of polynuclear leucocytes.	4 years.	1. Elliptical incision over tumor. 2. Tumor dissected out to its connection with urethra and removed. 3. Wound closed by 10 silk sutures.	Stitches removed in 10 days. Union complete.
Lannelongue.	11	S.	Small tumor in vault of vagina. Some involuntary discharge of urine.		Several linear scars made over sac with thermocautery to diminish sac.	Unsuccessful.
Newman.	35		Tenesmus. Slight incontinence of urine. Small tumor in vaginal vault, which communicated with urethra.		Dilatation of urethra and irrigation.	Reported well in 2 months.
Piedpremier.	55	M.	Painful coition. Slight involuntary discharge of urine. Tumor in vaginal vault size of "nut." Slight discharge of pus from urethra on pressure over sac.		Tumor incised <i>per vaginam</i> and rubber tube introduced.	Cured.
Priestley.* Priestley.*						{ Only palliative treatment allowed.
Routh.	33	M.	Painful micturition. Tumor size of marble in vaginal vault, communicating with floor of urethra.		Sac dissected out and wound closed by sutures.	Wound healed in seven days. Cured.
Routh.	60	M.	Painful micturition. Sac size of walnut in vaginal vault. Contained thin offensive pus and had two openings into urethra.		Sac excised and wound closed.	Small opening remained in lower angle of wound. Cured.
Routh.	27	M.	Tender swelling in vaginal vault. Pressure caused discharge of irritating fluid from urethra.	1 month.	Portion of sac removed and patient advised to urinate in genu-pectoral position.	Wound healed in 20 days. Cured.

\* No details given.

Reported by	Age.	Married or Single.	Chief Symptoms.	Duration.	Cause.	Operation.	Complications.	Result.
Santesson.		M.	Painful micturition. Pruritus and fulness in ant. vag. vault. Pressure over ant. vag. vault caused escape of contents into bladder.	12 years.	Injuries at birth of child.	Removal of elliptical piece of sac wall.	Sloughing of part of sac wall.	Cured. Died 5 years later of nephritis.
Simons.	44	M.	Involuntary passage of urine on excessive exercise. Tumor size of hen's egg in vaginal vault.			Several veins ligated. Sac cauterized with zinc.		Cured.
Skene.			Sac in urethro-vag.-septum communicating with urethra.					
Tait (1875).			Sac size of hen's egg in vault of vagina. Pressure caused escape of ammoniacal urine from urethra.			Sac cut away and wound closed by sutures.		
Tait. Tait. Tait.	23 52 32		{ Swelling in vaginal vault. Painful micturition followed by escape of pus from urethra. All communicated with floor of urethra.			{ Sacs dissected out and wounds closed with silver wire.		{ All left hospital cured within 20 days.
Thomas.			Frequent and painful micturition. Tumor size of hen's egg in vaginal vault. Pressure over tumor caused escape of pus from urethra.			Dilated portion of urethra cut away and wound closed.		
Winckel.			Tumor the size of a walnut in vaginal vault. Pressure caused discharge of pus from urethra.			Patient cured herself by repeatedly emptying the sac and then applying lead-water poultices.		

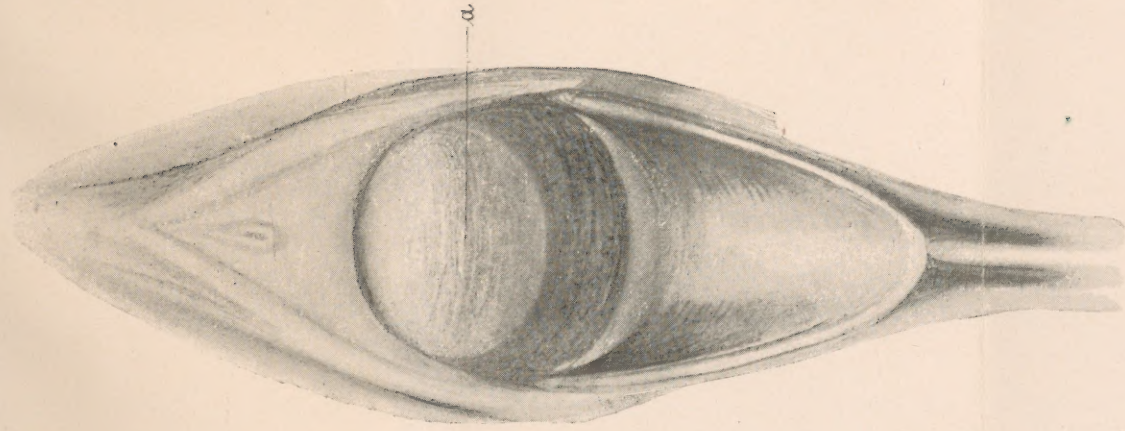


FIG. 1.  
a shows the tumor in the vault of the vagina below  
and posterior to the urethra.

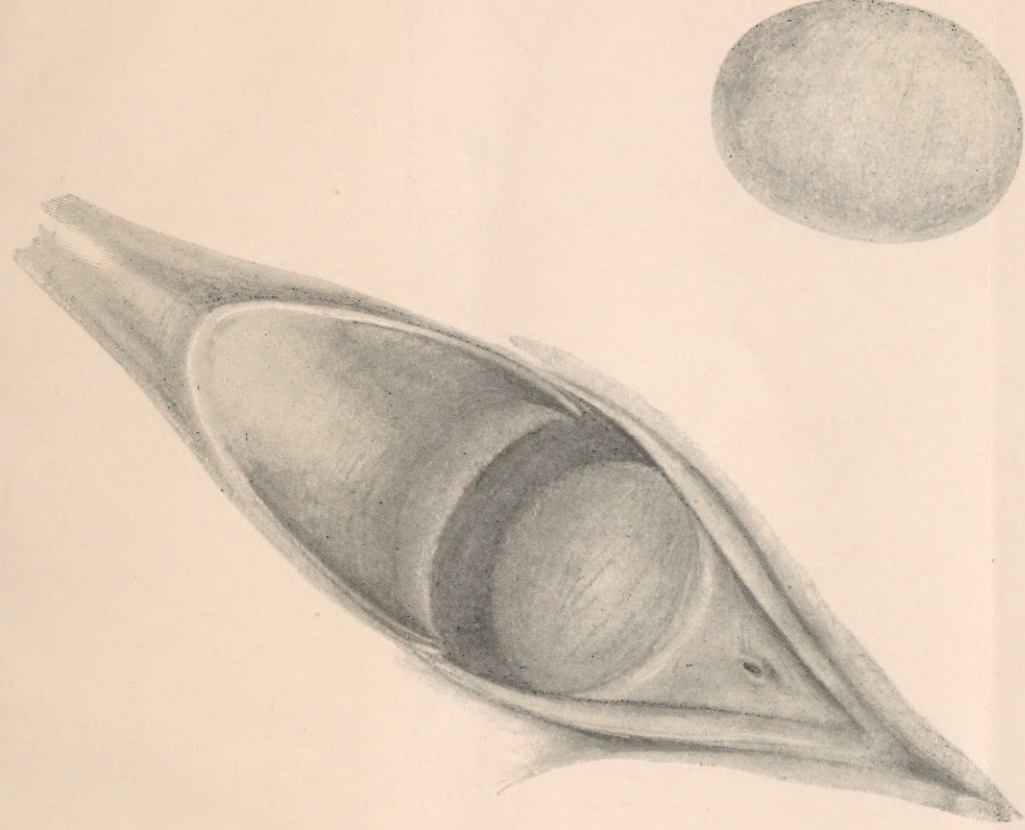


FIG. 5.  
View of tumor with the patient in left lateral position.

FIG. 6.  
Actual size of tumor.

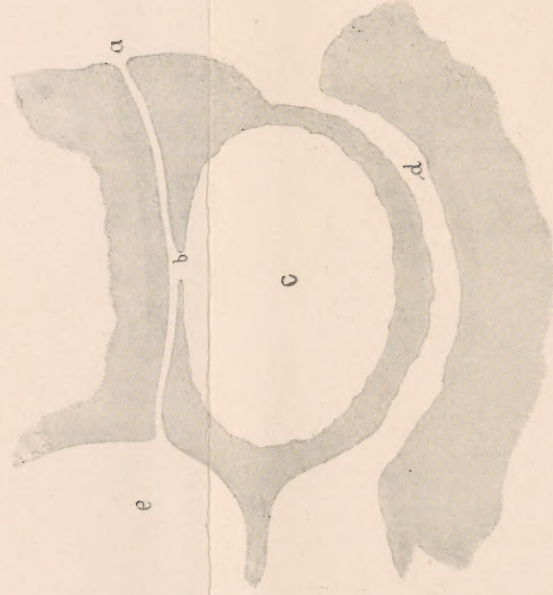


FIG. 2.

*Longitudinal Section.* -a represents the urethra; b the opening between urethra and sac; c the vagina, which is encroached upon and thus appears very flat; d the bladder.

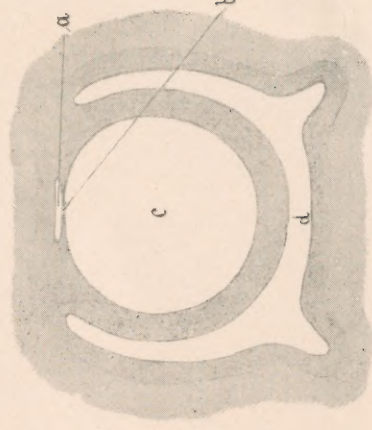


FIG. 3.

*Cross Section.* -a represents the urethra; b the opening between urethra and sac; c the sac; d the vagina.



FIG. 4.

Shows the opening in the floor of the urethra as viewed through the urethral speculum.



